

**Aqueous coating material and modular system for its preparation**

**5 Patent claims:**

*Sub A2* → 1. An aqueous coating material preparable by mixing with one another

10 (A1) at least one substantially water-free color-  
and/or effect-imparting base color  
comprising

15 (a11) at least one optionally water-soluble  
or dispersible binder,

(a12) at least one color and/or effect  
pigment, and

20 (a13) at least one optionally water-miscible  
organic solvent and also, if desired,  
comprising

(a14) at least one crosslinking agent and/or

25 (a15) at least one auxiliary and/or additive  
(coatings additive);

Sub A1  
cont.

5

(A2) at least one aqueous color-imparting base color comprising

(a21) at least one water-soluble or -dispersible binder,

(a22) at least one color pigment, and

(a23) water, and also, if desired, comprising

10

(a24) at least one optionally water-miscible organic solvent,

(a25) at least one crosslinking agent and/or

15

(a26) at least one auxiliary and/or additive (coatings additive);

and

20

(B) at least one aqueous, pigment-free mixing varnish comprising

(b1) at least one water/soluble or -dispersible binder and

25

(b2) water, and also, if desired, comprising

(b3) at least one crosslinking agent and/or

10010336-103004

(b4) at least one auxiliary and/or additive  
(coatings additive);  
and also, if desired, comprising

5 (C) a pigment-free aqueous medium comprising

(c1) at least one rheology control additive;  
with the proviso that the coatings additives  
(a15), (a26) and/or (b4) may also comprise at  
10 least one rheology control additive (c1).

2. A modular system for preparing aqueous coating  
materials, at least comprising

15 (I) at least one substantially water-free color  
and/or effect module comprising

(A1) at least one substantially color- and/or  
effect-imparting base color comprising

20

(a11) at least one optionally water-  
soluble or -dispersible binder,

25

(a12) at least one color and and/or  
[sic] effect pigment, and

(a13) at least one optionally water-  
miscible organic solvent and  
also, if desired, comprising

Sub A1  
cont.

10010335-103001

(a14) at least one crosslinking agent  
and/or

(a15) at least one auxiliary and/or  
additive (coatings additive);

(II) at least one aqueous color module  
comprising

(A2) at least one aqueous color-imparting  
base color comprising

(a21) at least one water-soluble or  
-dispersible binder,

(a22) at least one color pigment,  
and

(a23) water, and also, if desired,  
comprising

(a24) at least one optionally water-  
miscible organic solvent,

(a25) at least one crosslinking  
agent and/or

(a26) at least one auxiliary and/or  
additive (coatings additive);

and

Sub A2  
and -

5

10

15

20

25

5

10

15

20

and also, if desired, comprising

(IV) at least one pigment-free rheology module comprising

25

(c1) at least one rheology control additive;

with the proviso that the coatings additives (a15), (a26) and/or (b4) may also comprise at least one rheology control additive (c1).

5 3. A process for preparing an aqueous coating material with precisely defined shade and optical effect by with [sic] mixing modules differing in material composition and function and stored separately from one another, shortly before the application of the coating material, which comprises mixing with one another at least [sic]

(I) at least one substantially water-free color and/or effect module comprising

(A1) at least one substantially water-free color- and/or effect-imparting base color comprising

(a11) at least one optionally water-soluble or -dispersible binder,

(a12) at least one color and/or effect pigment, and

(a13) at least one optionally water-miscible organic solvent and also, if desired, comprising

(a14) at least one crosslinking agent  
and/or

(a15) at least one auxiliary and/or  
additive (coatings additive);

(II) at least one aqueous color module comprising

(A2) at least one aqueous color-imparting  
base color comprising

(a21) at least one water-soluble or  
-dispersible binder,

(a22) at least one color pigment, and

(a23) water, and also, if desired,  
comprising

(a24) at least one optionally water-  
miscible organic solvent,

(a25) at least one crosslinking agent  
and/or

(a26) at least one auxiliary and/or  
additive (coatings additive);

and

Sub A2  
cont.

10010330-10001

Sub A2  
and

10018336-103001

- (III) at least one pigment-free mixing varnish module comprising
- 5 (B) at least one aqueous, pigment-free mixing varnish comprising
- (b1) at least one water-soluble or -dispersible binder and
- 10 (b2) water, and also, if desired, comprising
- (b3) at least one crosslinking agent and/or
- 15 (b4) at least one auxiliary and/or additive (coatings additive);
- 20 and also, if desired, comprising
- (IV) at least one pigment-free rheology module comprising
- 25 (C) an aqueous medium comprising
- (c1) at least one rheology control additive;



with the proviso that the coatings additives (a15), (a26) and/or (b4) may also comprise at least one rheology control additive (c1).

5 4. The aqueous coating material as claimed in claim 1, the modular system as claimed in claim 2 or the process as claimed in claim 3, wherein the base color (A1) imparts effect or both color and effect.

10

5. The modular system as claimed in claim 2 or 4 or the process as claimed in claim 3 or 4, wherein the modular system comprises

15

1. at least one substantially water-free color module (I), at least one aqueous color module (II), and at least one aqueous, pigment-free mixing varnish module (III) or

20

2. at least one substantially water-free color and effect module (I), at least one aqueous color module (II), and at least one aqueous, pigment-free mixing varnish module (III), or

25

3. at least one substantially water-free effect module (I), at least one substantially water-free color module (I), at least one aqueous color module (II), and at least one aqueous, pigment-free mixing varnish module (III).

- Sub A2  
cont:
6. The coating material as claimed in claim 1 or 4,  
the modular system as claimed in any of claims 2,  
4 and 5, or the process as claimed in any of  
claims 3 to 5, wherein at least one aqueous,  
5 pigment-free mixing varnish (B) comprises at least  
one rheology control additive as coatings  
additive (b4).
7. The coating material as claimed in claim 1 or 4,  
10 comprising a pigment-free aqueous medium (C), the  
rheology control additive (c1) being present only  
in said medium (C).
8. The modular system as claimed in any of claims 2,  
15 4 and 5 or process as claimed in any of claims 3  
to 5, wherein the modular system comprises at  
least one pigment-free rheology module (IV).
9. The aqueous coating material as claimed in any of  
20 claims 1, 4, 6 and 7, the modular system as  
claimed in any of claims 2, 4 to 6 and 8, or the  
process as claimed in with [sic] any of claims 3  
to 6 and 8, wherein the binders (a11), (a21), and  
(b1) come from the same polymer class.
- 25 10. The aqueous coating material, the modular system  
or the process as claimed in claim 9, wherein the  
binders (a11), (a21) and (b1) are polyurethane  
resins.

SECRET

Sub A2  
cont.

11. The aqueous coating material as claimed in any of claims 1, 4, 6, 7, 9 and 10, the modular system as claimed in any of claims 2, 4 to 6 and 8 to 10, or the process as claimed in any of claims 3 to 6 and 8 to 10, wherein the binders (a21) and (b1) and also, if desired, the binder (a11) comprise

(ii) functional groups which can be converted into anions by neutralizing agents, and/or anionic groups, especially carboxylic acid and/or carboxylate groups.

12. The use of the aqueous coating material as claimed in any of claims 1, 4, 6, 7, 9 and 10, of the modular system as claimed in any of claims 2, 4 to 6 and 8 to 10, or of the process as claimed in any of claims 3 to 6 and 8 to 10 in automotive OEM finishing, refinish, and the coating of plastics, but especially automotive refinish.

13. The use of the aqueous coating material as claimed in any of claims 1, 4, 6, 7, 9 and 10, of the modular system as claimed in any of claims 2, 4 to 6 and 8 to 10, or of the process as claimed in any of claims 3 to 6 and 8 to 10 for preparing solid-color topcoats and basecoats, but especially basecoats, for automotive OEM finishing, refinish, and the coating of plastics, but especially automotive refinish.

Sub A2  
cont.

14. An automotive OEM coating or automotive refinish,  
or else a coating on a plastic, producible from  
aqueous coating materials as set forth in any of  
claims 1, 4, 6, 7, 9 and 10 and/or using the  
modular system as claimed in any of claims 2, 4 to  
6 and 8 to 10 and/or using the process as claimed  
in any of claims 3 to 6 and 8 to 10.

15. An automotive OEM coating or automotive refinish,  
or else a coating on a plastic, as claimed in  
claim 14, comprising multicoat color and/or effect  
coating systems producible in particular by the  
wet-on-wet technique.

16. An article, especially an automobile body or  
plastics component, having an automotive OEM  
finish or automotive refinish and/or a coating on  
a plastic, as claimed in claim 14 or 15.

Add A3